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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/730,166	12/05/2003	Jean Dominique Turgis	C-504 CIP	2931

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EXAMINER

SHOSHO, CALLIE E

ART UNIT	PAPER NUMBER
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1714

DATE MAILED: 03/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/730,166

Applicant(s)

TURGIS ET AL.

Examiner

Callie E. Shosho

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2/19/04 & 4/11/05</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 6-8 and 14-15 are rejected under 35 U.S.C. 102(e) as being anticipated by
Noguchi et al. (U.S. 6,790,875)

Noguchi et al. disclose aqueous energy curable ink comprising metallic colorant and energy curable vehicle made of homogenous, aqueous composition comprising 40-90% water, 1-30% ethylenically unsaturated resin containing neutralized functional groups, and photoinitiator. There is also disclosed method of printing comprising applying to a substrate the above ink and subjecting the substrate to actinic radiation to form an energy cured water resistant printed product (col.1, lines 10-18, col.3, line 65-col.4, line 9, col.4, lines 20-21, col.7, lines 5-15, col.21, lines 40-62, col.22, lines 4-18, col.25, lines 44-49, col.25, line 61-col.26, line 2, col.28, lines 21-48, col.29, lines 12-55, and col.30, lines 6-13).

In light of the above, it is clear that Noguchi et al. anticipate the present claims.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Laksin et al. (U.S. 2003/0154871) in view of Tanaka et al. (U.S. 5,587,405).

Laksin et al. disclose aqueous, energy curable printing ink comprising pigment wherein the ink is formulated using a single phase, i.e. homogenous, composition comprising 5-50% water, ethylenically unsaturated resin containing neutralized acidic or basic functional groups, water-insoluble oligomer, water-soluble oligomer, and photoinitiator. There is also disclosed method of printing comprising applying the ink to substrate and then subjecting the substrate to actinic radiation. Although there is no disclosure that the ink is water resistant, given that Laksin et al. disclose ink identical to that presently claimed, it is clear that the ink is inherently water resistant (paragraphs 20-33, 35, 39, 62, 71-80, 92-102, 103-109, and claim 3). Attention is drawn to example of paragraphs 103-109 that discloses ink comprising 30.5% water and 9% neutralized resin.

The difference between Laksin et al. and et al. and the present claimed invention is the requirement in the claims of specific pigment.

Laksin et al. disclose the use of pigment, however, there is no disclosure of the use of metallic pigment as presently claimed.

Tanaka et al., which is drawn to radiation curable ink, disclose the use of metal pigment such as metal powder in order to produce ink with fast color having strong light resistance. Tanaka et al. also disclose the equivalence and interchangeability of using organic pigment or carbon black, as disclosed by Laksin et al., with using the metal pigment (col.14, line 62-col.15, line 21).

In light of the above, it therefore would have been obvious to one of ordinary skill in the art to use metal pigment in the ink of Laksin et al. in order to produce ink with fast color having strong light resistance, and thereby arrive at the claimed invention.

6. Claims 6-8 and 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gummeson (U.S. 2002/0198289) in view of Tanaka et al. (U.S. 5,587,405).

Gummeson discloses aqueous, energy curable, homogenous ink comprising at least 50% aqueous carrier medium comprising 30-100% water and 0-70% solvent, pigment, 20-50% UV curable resin having neutralized functional groups, and photoinitiator. There is also disclosed method of printing comprising applying to a substrate the above ink and subjecting the substrate to actinic radiation to form an energy cured water resistant printed product (paragraphs 2, 19-22; 26-27, 34, 40-42, 48, 59, and 75-77).

The difference between Gummeson and et al. and the present claimed invention is the requirement in the claims of specific pigment.

Gummeson discloses the use of pigment, however, there is no disclosure of the use of metallic pigment as presently claimed.

Tanaka et al., which is drawn to radiation curable ink, disclose the use of metal pigment such as metal powder in order to produce ink with fast color having strong light resistance.

Tanaka et al. also disclose the equivalence and interchangeability of using organic pigment or carbon black, as disclosed by Gummeson, with using the metal pigment (col.14, line 62-col.15, line 21).

In light of the above, it therefore would have been obvious to one of ordinary skill in the art to use metal pigment in the ink of Gummeson in order to produce ink with fast color having strong light resistance, and thereby arrive at the claimed invention.

7. Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 99/19369 in view of Thanawalla et al. (U.S. 4,745,138) and Tanaka et al. (U.S. 5,587,405).

WO 99/19369 discloses aqueous energy curable printing ink comprising pigment and aqueous solution, i.e. homogenous, of water, diluent, 5-25% ethylenically unsaturated resin having neutralized functional groups, and photoinitiator. There is also disclosed method of printing comprising applying to a substrate the above ink and subjecting the substrate to actinic radiation to form an energy cured water resistant printed product. Attention is drawn to example 9 that discloses ink comprising 46% water, 20% neutralized resin, water-soluble oligomer, pigment, and photoinitiator. Although there is no disclosure that the ink is water resistant, given that WO 99/19369 discloses ink identical to that presently claimed, it is clear that the ink is inherently water resistant (page 1, 1st paragraph, page 3, 3rd full paragraph, page 4, 1st paragraph, paragraph bridging pages 4-5, paragraph bridging pages 5-6, page 6, 2nd full paragraph – page 7, last paragraph, paragraph bridging pages 8-9, paragraph bridging pages 9-10, page 10, 1st full paragraph, example 9, and example 12). For specific details regarding the diluent, WO 99/19369 refers to Thanawalla et al. which discloses the use of diluent that is one or more, i.e. combination, water-soluble oligomer and water-insoluble oligomer (col.5, line 62-col.6, line 15 and col.6, lines 44-60).

The difference between WO 99/19369 and the present claimed invention is the requirement in the claims of specific pigment.

WO 99/19369 discloses the use of pigment, however, there is no disclosure of the use of metallic pigment as presently claimed.

Tanaka et al., which is drawn to radiation curable ink, disclose the use of metal pigment such as metal powder in order to produce ink with fast color having strong light resistance. Tanaka et al. also disclose the equivalence and interchangeability of using organic pigment, as disclosed by WO 99/19369, with using the metal pigment (col.14, line 62-col.15, line 21).

In light of the above, it therefore would have been obvious to one of ordinary skill in the art to use metal pigment in the ink of WO 99/19369 in order to produce ink with fast color having strong light resistance, and thereby arrive at the claimed invention.

8. Claims 1-2, 6-7, 9, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Phillips et al. (*Radiation Curable Water Dilutable Polyester Acrylates*).

Phillips et al. disclose aqueous energy curable printing ink comprising pigment, photoinitiator, and aqueous solution, i.e. homogenous, of water, water-soluble ethylenically unsaturated oligomer, i.e. polyethylene glycol diacrylate, and ethylenically unsaturated resin having neutralized functional groups. There is also disclosed method of printing comprising applying to a substrate the above ink and subjecting the substrate to actinic radiation to form an energy cured water resistant printed product (pages 1-2).

The difference between Phillips et al. and the present claimed invention is the requirement in the claims of specific pigment.

Phillips et al. disclose the use of pigment, however, there is no disclosure of the use of metallic pigment as presently claimed.

Tanaka et al., which is drawn to radiation curable ink, disclose the use of metal pigment such as metal powder in order to produce ink with fast color having strong light resistance (col.14, line 62-col.15, line 21).

In light of the above, it therefore would have been obvious to one of ordinary skill in the art to use metal pigment in the ink of Phillips et al. in order to produce ink with fast color having strong light resistance, and thereby arrive at the claimed invention.

9. Claims 1-5, 9, and 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Noguchi et al. (U.S. 6,790,875) in view of Figov (U.S. 5,623,001).

Noguchi et al. disclose aqueous energy curable ink comprising metallic colorant and energy curable vehicle made of homogenous, aqueous composition comprising 40-90% water, 1-30% ethylenically unsaturated resin containing neutralized functional groups, and photoinitiator. There is also disclosed method of printing comprising applying to a substrate the above ink and subjecting the substrate to actinic radiation to form an energy cured water resistant printed product (col.1, lines 10-18, col.3, line 65-col.4, line 9, col.4, lines 20-21, col.7, lines 5-15, col.21, lines 40-62, col.22, lines 4-18, col.25, lines 44-49, col.25, line 61-col.26, line 2, col.28, lines 21-48, col.29, lines 12-55, and col.30, lines 6-13).

The difference between Noguchi et al. and the present claimed invention is the requirement in the claim of ethylenically unsaturated oligomer.

Figov, which is drawn to aqueous energy curable ink, discloses the use of ethylenically unsaturated oligomer in order to produce ink with sufficient film-forming properties to effectively dry during curing (col.3, line 45-col.4, line 4).

In light of the motivation for using ethylenically unsaturated oligomer disclosed by Figov as described above, it therefore would have been obvious to one of ordinary skill in the art to use ethylenically unsaturated oligomer in the ink of Noguchi et al. in order to produce ink with sufficient film-forming properties so that the ink effectively dries during curing, and thereby arrive at the claimed invention.

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

EP 287019 discloses radiation curable composition comprising neutralized resin, ethylenically unsaturated oligomer, and photoinitiator, however, there is no disclosure that the composition comprises water or metallic pigment as required in all the present claims. While the composition is developable by an aqueous developer, there is no disclosure that the composition itself comprises water.

Laksin et al. (U.S. 6,232,361) and Samaranayake (U.S. 6,743,514) each disclose aqueous energy curable ink comprising water, pigment, cationic polymerizable compound, cationic initiator, resin, and ethylenically unsaturated oligomer, however, there is no disclosure that the resin has neutralized functional groups or any disclosure of metallic pigment as required in all the present claims.

EP 35574 discloses protective coating comprising water and neutralized resin, however, there is no disclosure that the composition comprises metallic pigment as required in all the present claims or any disclosure of ethylenically unsaturated oligomer as required in present claim 1 and 9. EP 35574 also discloses radiation curable ink comprising ethylenically

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unsaturated oligomer, resin having neutralized groups, metallic colorant, and photoinitiator, however, there is no disclosure that the ink comprises water as required in all the present claims.

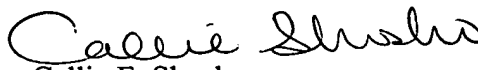
Beck et al. (U.S. 2003/0152715) discloses aqueous, radiation curable ink comprising water, ethylenically unsaturated oligomer, pigment, and resin, however, there is no disclosure that the resin has neutralized functional groups or any disclosure of metallic pigment or homogeneous vehicle as required in all the present claims.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie E. Shosho whose telephone number is 571-272-1123. The examiner can normally be reached on Monday-Friday (6:30-4:00) Alternate Fridays Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CS
3/24/06


Callie E. Shosho
Primary Examiner
Art Unit 1714